DEVELOPMENT AND DAMAGE OF THE CORN MOTH

Arslanbek Fayzullaevich Khaytmuratov
Doctor of Agricultural Sciences, professor, Termez Institute of Agrotechnologies and Innovative Development
xayitmurodov62@mail.ru

Mamlakat Abdukarimovna Abdukarimova
Student, Termez Institute of Agrotechnologies and Innovative Development
a.a.mamlakat@gmail.com

Aziza Muhiddinovna Kulmurotova
Student, Termez Institute of Agrotechnologies and Innovative Development
azizakulmurotova@gmail.com

ABSTRACT

The article presents the results of research on the development and damage of the corn moth (Ostrinia nubilalis Hb.) in the conditions of the southern districts of Surkhandarya region. Also, three to four generations of the pest develop during the season, and the damage is high.

Keywords: Plant, stem, corn moth, butterfly, egg, worm, mushroom, generation, pest, beneficial temperature sum.

ANNOTATSIYA

Maqolada Surxondaryo viloyatining janubiy tumanlari sharoitida makkajo‘xori parvonasi (Ostrinia nubilalis Hb.) ning rivojlanishi va zararini o‘rganish bo‘yicha tadqiqot natijalari berilgan. Shuningdek zararkunandaning mavsum davomida uch-to‘rt avlodi rivojlanib, zarari yuqoriligi qayd etilgan.

Kalit so‘zlar: O‘simlik, poya,makkajuxori parvonasi, kapalak, tuxum, qurt, g‘umbak, avlod, zararkunanda,foydali harorat yig‘indisi.

INTRODUCTION

Maize is grown in large areas in Uzbekistan as an important fodder and food crop. One of the important sources of obtaining a high yield from this crop is the development and implementation of scientifically based methods of combating pests and diseases. One of the important tasks in solving this problem is to study the species composition of corn

pests, their biology and ecology in different environmental conditions.

According to information, it is known that more than 20 species of arthropods can be found in corn and cause damage. According to V. V. Yakhontov (1962), if corn is not protected from pests in time, its yield may decrease by 70%.

Among the rodent pests of corn, the corn stem borer Ostrinia nubilalis Hb. has a special place. In recent years, its level of damage has been increasing significantly.

Therefore, we conducted research on the spread, development, reproduction, damage of corn stem moth and their natural entomophages in the conditions of Surkhandarya region.

RESEARCH METHOD

Scientific research was conducted in 2019-2022 in the southern districts of Surkhandarya region. Experimental and observation works of scientific research were carried out mainly in the fields of Namuna, Dostlik Water Consumers Associations of Termiz district, as well as in Angor, Muzrabod, Sherabad, Kyziriq fields of the southern districts of the region.

Observation, experiment, comparison and other methods were used in scientific research.

Observation, collection, storage and material processing of phytophages and entomophages was used according to V.P. Pali's methodical manual.

RESEARCH RESULTS AND DISCUSSION

Corn moth (Ostrinia nubilalis Hb.) is an insect belonging to the Pyralidae family of the Lepidoptera family.

Male and female butterflies are very different in appearance. The male is smaller than the female (27-28 mm), the female (31-32 mm). The wings of the male are generally dark in color. Front wings yellow or light brown; a thick white line runs transversely from the middle of the hind wings. When butterflies are sitting still, their wings close and completely cover the cavity. The egg is flat and oval in shape; Butterflies put them in groups of 10-15 pieces on the underside of the leaf.

An adult worm reaches 25 mm; color is yellowish gray; a thick dark line passes through the shoulder; each segment has 4 shields; shields of the head, neck and end of the segment are brown; the heel of the fake legs is round and has loops in the shape of a circle.

The tuber is light brown, up to 20 mm long: there are 4 looped outgrowths at the end of the body (Fig. 1).

It is known from the researches that the corn plant grows in three to four stages during the season in the southern districts of Surkhandarya region. The pest hibernates in the underground part of the stem during the 4-5-year-old caterpillar period. The lower limit of development of corn stalk propeller is 10 C. Therefore, the total temperature useful for the development of one generation is 710-715 C.

In the spring, after the air temperature rises above 15-160 (in the second half of April in Surkhandarya conditions), worms begin to pupate. Before that, the worms make a round hole by gnawing the wall of the stem to make it easier for the future butterfly to fly out. Air humidity is very important during the development of worms. In general, as the corn moth is a moisture-loving species, it develops well in regions with high air humidity, as well as in areas with abundant rainfall in the spring or irrigated fields. And mostly, drought is the enemy of this pest. Many worms die in such conditions. Before pupation, worms wrap a soft and thin cocoon.

Figure 1. The dome of the corn propeller (A. Khaytmuratov 2019)

In the conditions of Surkhandarya, butterflies fly out usually in the 2nd-3rd decade of May. Butterflies get extra food and when they become adults, they fly and start laying eggs. It lays its eggs behind the leaves of black sedge, corn, millet, hemp, etc. Eggs are usually laid in corn during the flowering period of the plant. Egg laying lasts 15-25 days. During this period, she usually lays 250-350 eggs, and at most 1250 eggs. Butterflies live an active life at night, hiding in cool places during the day.

Worms hatched from eggs first live in swarms. At this time, it feeds on leaf tissues and lives in the open, and is a food for many insects. From the third age, it spreads to the same and neighboring plants. This period is considered to be the most favorable for giving protective treatment. Adult worms begin to feed on the crown and pupa of the plant, then enter the stem and eat the core and move downwards. Such plants can be broken by wind and agricultural activities.

In their life, worms shed their skin 4 times and live 5 years. In the conditions of Surkhandarya region, the worms that go to the village prepare for the village without burrowing inside the stem.

The corn borer (worm) is one of the pests that harms many plants; from cereals: damages corn, white sorghum, millet. This pest mostly affects corn.

In addition to causing damage by reducing the yield, corn stalks and cobs are broken during harvesting, and the harvest from the damaged bush is not stored well.

Figure 2. Damage of stems and leaves by middle-aged caterpillars of corn moth (Khaitmuratov A. 2019).

The total damage caused by the corn borer to corn can be 20-25%. In this case, if the pest damages only the upper part of the plant (front of the sultan and sultan), the total damage is 6% (10.3 s/ha); if it damages the upper part of the stem above the first stem (stem and stem), the total damage is 39% (66.8 s/ha); if it damages the first stem on the stem and below, the total damage is 56% (96.0 s/ha); can organize.

Figure 3. Damage of stems and leaves by adult worms of the corn moth (A. Khaytmuratov 2020y).

According to our observations, in June 2019, in the 8-hectare field of the "Ismailjon Namuna" farm belonging to the Namuna Water Users' Association in Termiz district, in the flowering phase of corn, on average, 6 bushes out of 10 plants were damaged by the corn moth, and the number of moths on the damaged stem was 2 - 3 plants, in the 4-hectare field of the farm "Nurmuhammad Namana", the number of moths on the affected stem is 1-2 plants, in the 2-hectare field of the Surkhandarya Scientific Experimental Station of the Scientific Research Institute of Cotton Selection, Seeding and Cultivation Agrotechnologies, the average is 10 plants. 7 bushes of the plant were damaged by the corn moth, and it was found that the number of young worms in the damaged stem was 4-5 pieces (Fig. 3).

In the 12-hectare field of the "Asliddin Chori oglu" farm belonging to the Buyuk Surkhanabad water users' association in Kyziriq district, in the stage of corn production, on average, 4 out of 10 plants were damaged by the corn moth, and the affected stems and pods were damaged. the number of caterpillars was 1-2 pieces, and in the 18-hectare field of "Nazar Rizo" farm, the number of adult worms was 1-2 pieces, and it was found that the stems were broken due to damage (Fig. 3).

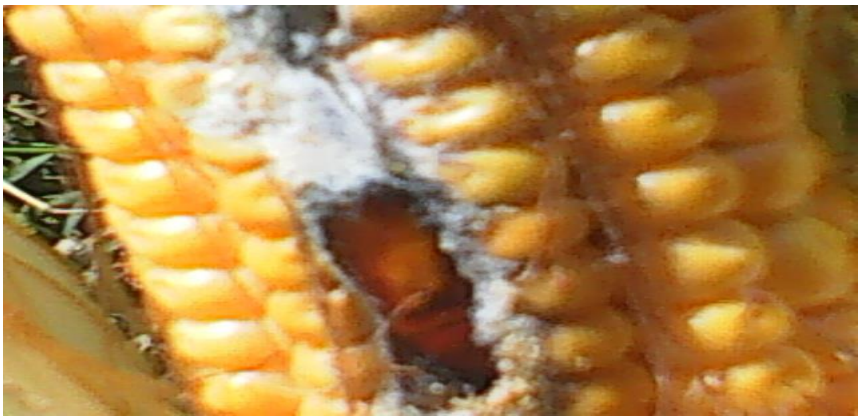

Figure 4. Mushrooming of the corn cob in the broth (A. Khaytmuratov 2022).

From our research, it became known that the corn moth can enter the tuber on the stalk of the corn it feeds on, even inside the cob (Fig. 4).

CONCLUSION

Maize millet grows in three to four stages during the season in the southern districts of Surkhandarya region. The pest hibernates in the underground part of the stem during the 4-5-year-old caterpillar period. Butterflies fly out in the II-III decade of May. Worms develop for 33-38 days.

In the southern regions of Surkhandarya region, Termiz, Angor, and Muzrobod districts, the damage of the corn moth is high, and due to frequent strong winds in these areas, the affected stalks break and the crop is completely lost.

REFERENCES

1. Khaytmuratov A.F., KarshievaS.Kh. Bioecology of dominant pest species on ephemeralephemeroid pastures. Texas Journal of Multidisciplinary Studies ISSN NO: 2770003 https: //zienjournals. com Date of Publication: 11-11-2021. Page 95-99.
2. Paliy V.F. “Metodika fenologicheskix i faunicticheskix issledovaniy nasekomыx” Frunze. 1966 g. 238 s.
3. Xaytmuratov A.F. Vrednaya entomofauna pastbыщ Uzbekistana i meгы borbы s ney. J. Byulleten nauki i praktiki. T. 5. №1. 2019 g. S. 217-223.\
4. Xo‘jayev SH.T. Yuldoshev F.E. va boshqalar. G‘alladan keyin ekiladigan o‘rindosh ekinlarni zararkunandalardan himoya qilish bo‘yicha tavsiyalar. Toshkent. -2014. 91 b.
5. Xo‘jayev SH.T. Yuldoshev F.E. Makkajo‘xori va boshqa baland bo‘yli o‘simliklarni zararkunandalardan himoya qilishning yangi texnologiyasi. Tavsiyalar. Toshkent.- 2017. 47 b.
6. Yaxontov V.V. "O‘rta Osiyo qishlok xo‘jalik o‘simliklari, maxsulotlari zarakunandalari va ularga qarshi kurash choralari" T. 1962.
7. Қайимов А.Қ., Бердиев Э.Т. Ландшафтли қурилиш (Дарслик). – Тошкент, “Fan va texnologia” нашриёти, 2016.
8. “Ўзбекистон Республикасида ландшафт дизайнинириводжлантириш Дастурини тасдиқлаш тўғрисида” (ЎзР Вазирлар Маҳкамасининг 2013 йил 13 августдаги 223-сон қарори). – Тошкент, 2013
9. http://www.backyardgardener.com/plantname/pda_de7b.html
10. https://www.researchgate.net/publication/215517134
11. Ya. X. YULDASHOV ,,KO‘CHATCHILIK VA GULCHILIK ISHLISH'' Kasb-hunar kollejlari uchun o'quv qo'llanma TOSHKENT «DAVR NASHRIYOTI» 20138.
12. E.T. Berdiyev , X.F.Xamroev ,,Dendralogiya”Uslubiy ko’rsatma Toshkent 2016.
13. Khaitovna PM, Faksriddinovich MS Technology of growing cauliflower // Texas Journal of Interdisciplinary Research. - 2022. - T. 6. - S. 8-10.
14. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Buztwd0AAAAJ&authuser=1&citation_for_view=Buztwd0AAAAJ:u-x6o8ySG0sC
15. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Buztwd0AAAAJ&authuser=1&citation_for_view=Buztwd0AAAAJ:2osOgNQ5qMEC
16. https://scholar.google.com/citations?view_op=view_citation&hl=ru&user=Buztwd0AAAAJ&authuser=1&citation_for_view=Buztwd0AAAAJ:qjMakFHDy7sC
17. https://doi.org/10.5281/zenodo.7115076
18. https://doi.org/10.5281/zenodo.7131539
19. E.T. Berdiyev , X.F.Xamroev, “Dendralogiya” Uslubiy ko’rsatma Toshkent 2016.